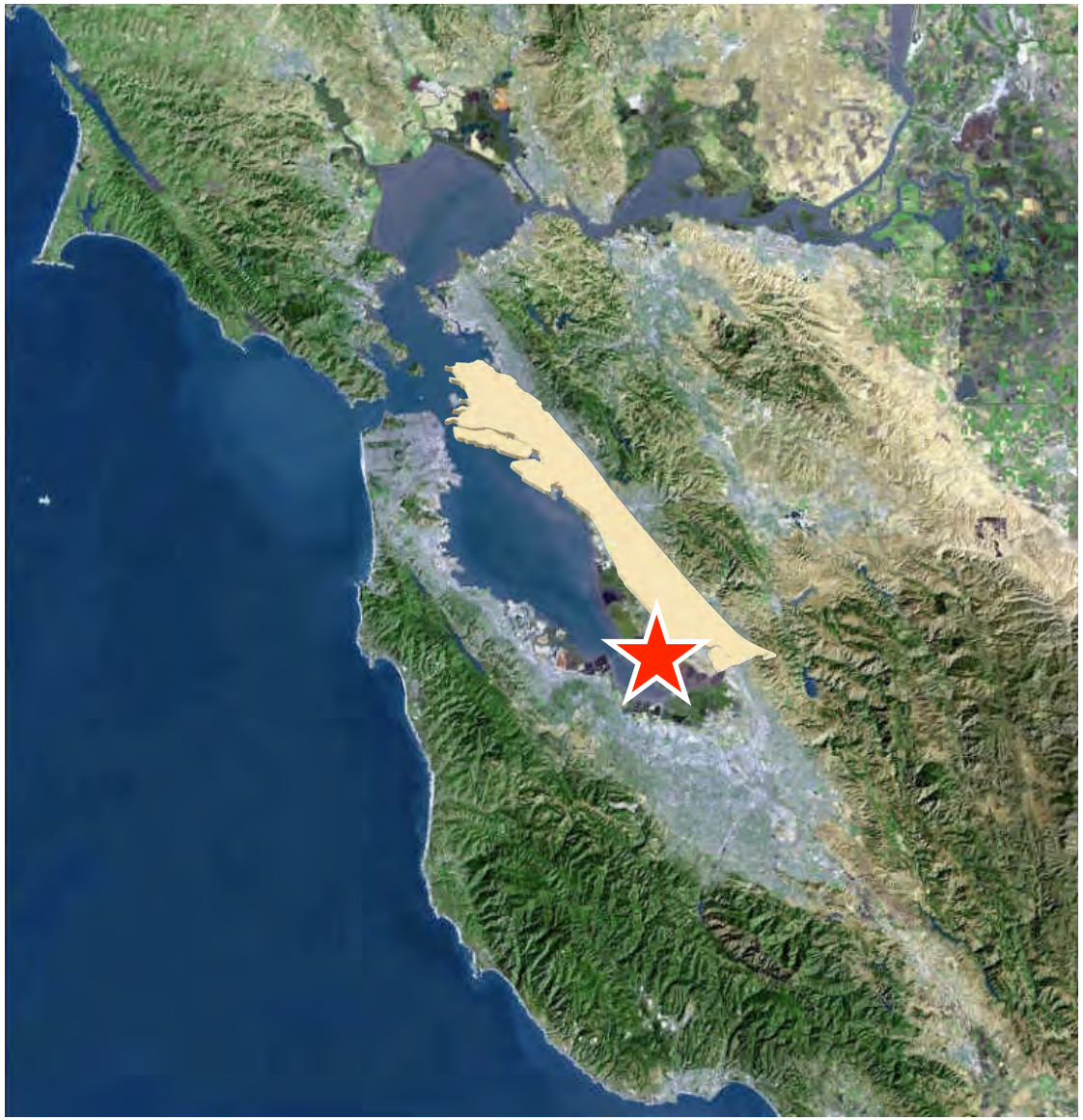
The
Adapting to Rising Tides
Program

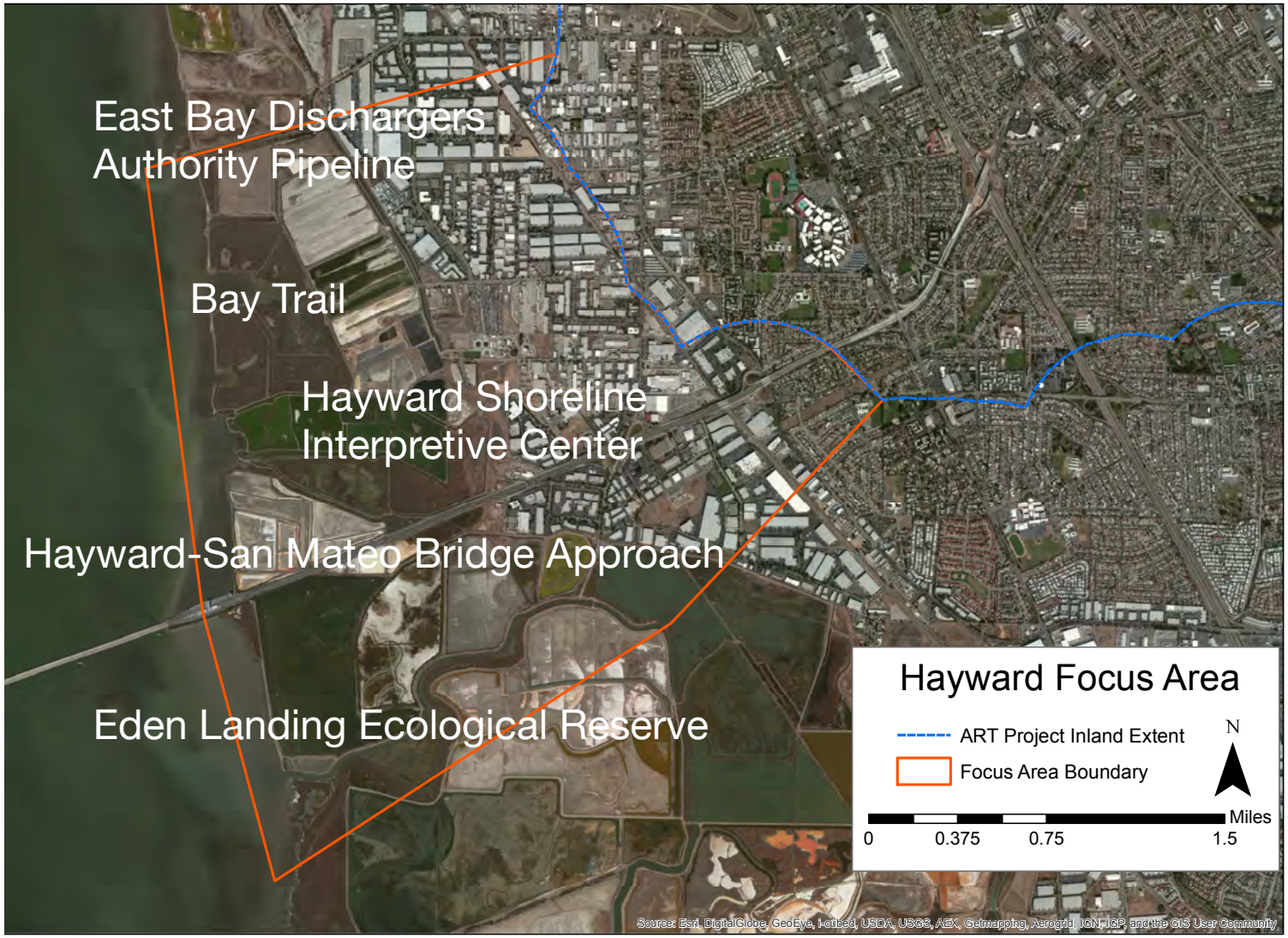
Hayward Resilience Study

San Francisco Bay Conservation
and Development Commission

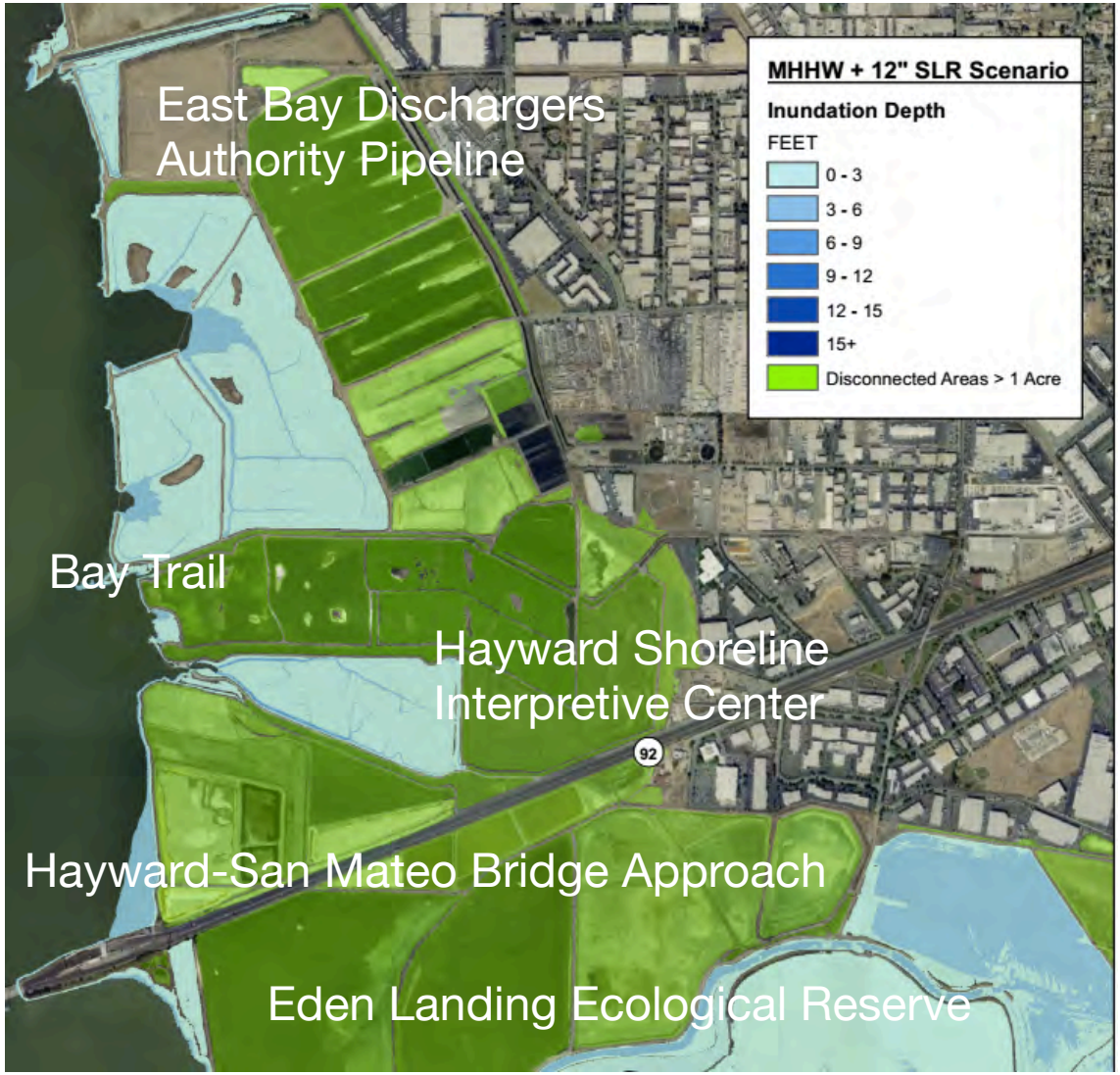
ART Program Focus on Hayward



Regionally Significant Assets



Sea Level Rise and Storm Event Exposure



Sea Level Rise and Storm Event Exposure

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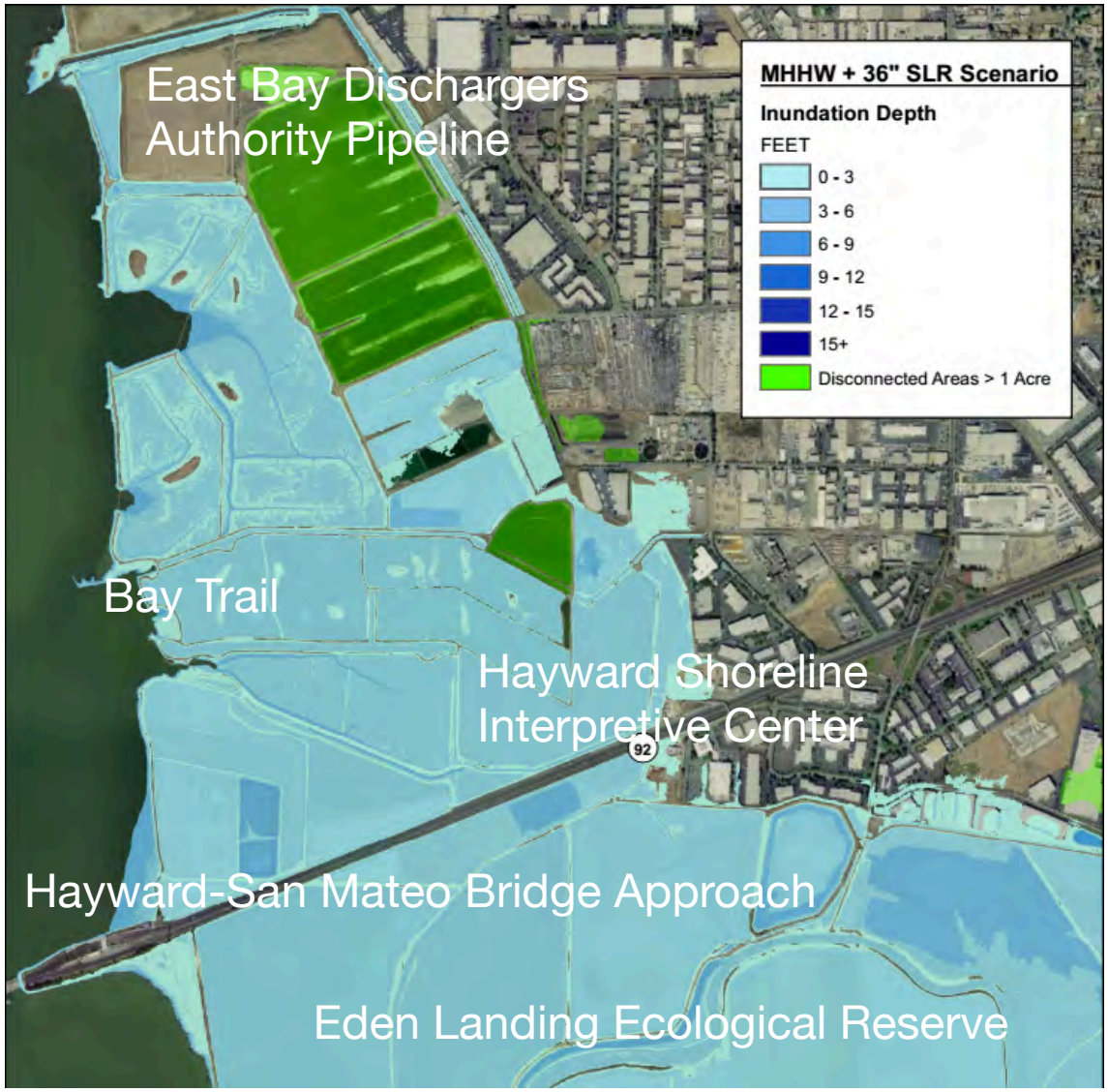
Flooding in Developed Area



Planning Process

Working Group

- City of Hayward
- East Bay Regional Park District
- Hayward Area Recreation and Park District
- East Bay Dischargers Authority
- Union Sanitary District
- California Coastal Conservancy
- Alameda County Flood Control Water Conservation District
- CalTrans
- Bay Trail

Resilience Goals

1. Protect the health, safety, and welfare of those who live, work, and recreate in the Hayward Shoreline area

2. Prevent the disruption of key community services by protecting critical infrastructure

3. Protect the environmental value of the Hayward Shoreline area by preserving habitat, water quality, and endangered species

4. Build organizational and community capacity so stakeholders can work collaboratively to address future conditions

Vulnerability Assessment

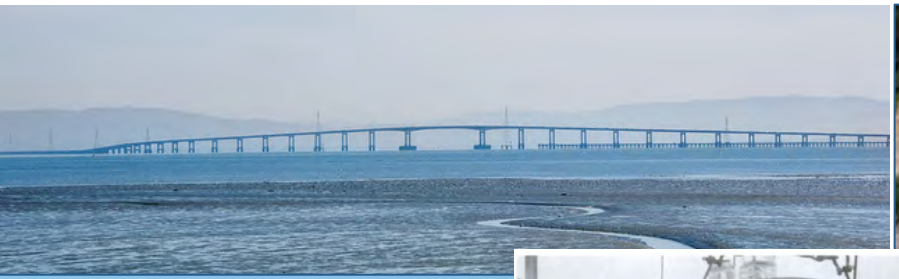
1. Shoreline Protection is Too Low

- Shoreline protection is ad hoc levees and natural areas
- Marshes are expected to downshift and eventually drown due to sea level rise and low sediment supply
- Structural shorelines are all at a similar elevation and overtop between 36-48” over MHHW

2. Widespread Consequences

Vulnerable Regional Assets:

- Hayward-San Mateo Bridge Approach
- East Bay Dischargers Authority Pipeline
- Hayward Water Pollution Control Facility
- Russell City Energy Center



3. Governance Vulnerabilities

- Lack of organizational capacity or structure to address issues beyond current jurisdiction, boundaries, or mission
- Limited financial support for current maintenance and repairs as well as long term planning and improvements
- Current regulatory process does not account for unavoidable changes due to sea level rise

4. Unique Recreation and Education At Risk

- Environmental education for 9,000 students/year
- 80,000 Bay Trail users/year
- Interpretation relies on vulnerable natural areas, levees, and trails

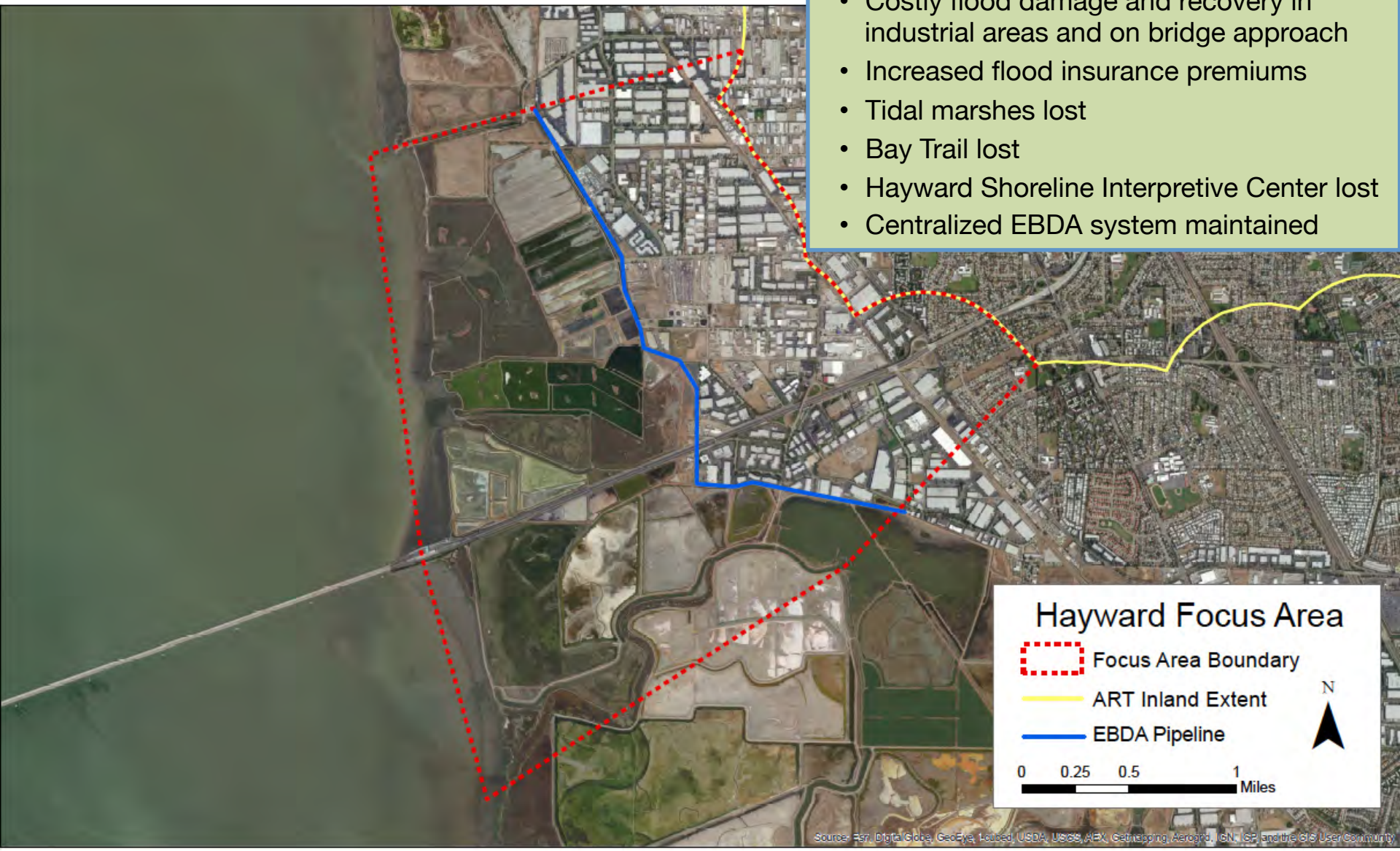
5. Landscape Solution Requires Coordination

- Study identified short term, individual and agency actions that can build resilience
- When water levels reach 36-48” above MHHW, the Hayward Focus Area will need a coordinated, multi-benefit, landscape-scale effort for future coastal flood protection

Business as usual

Key outcomes

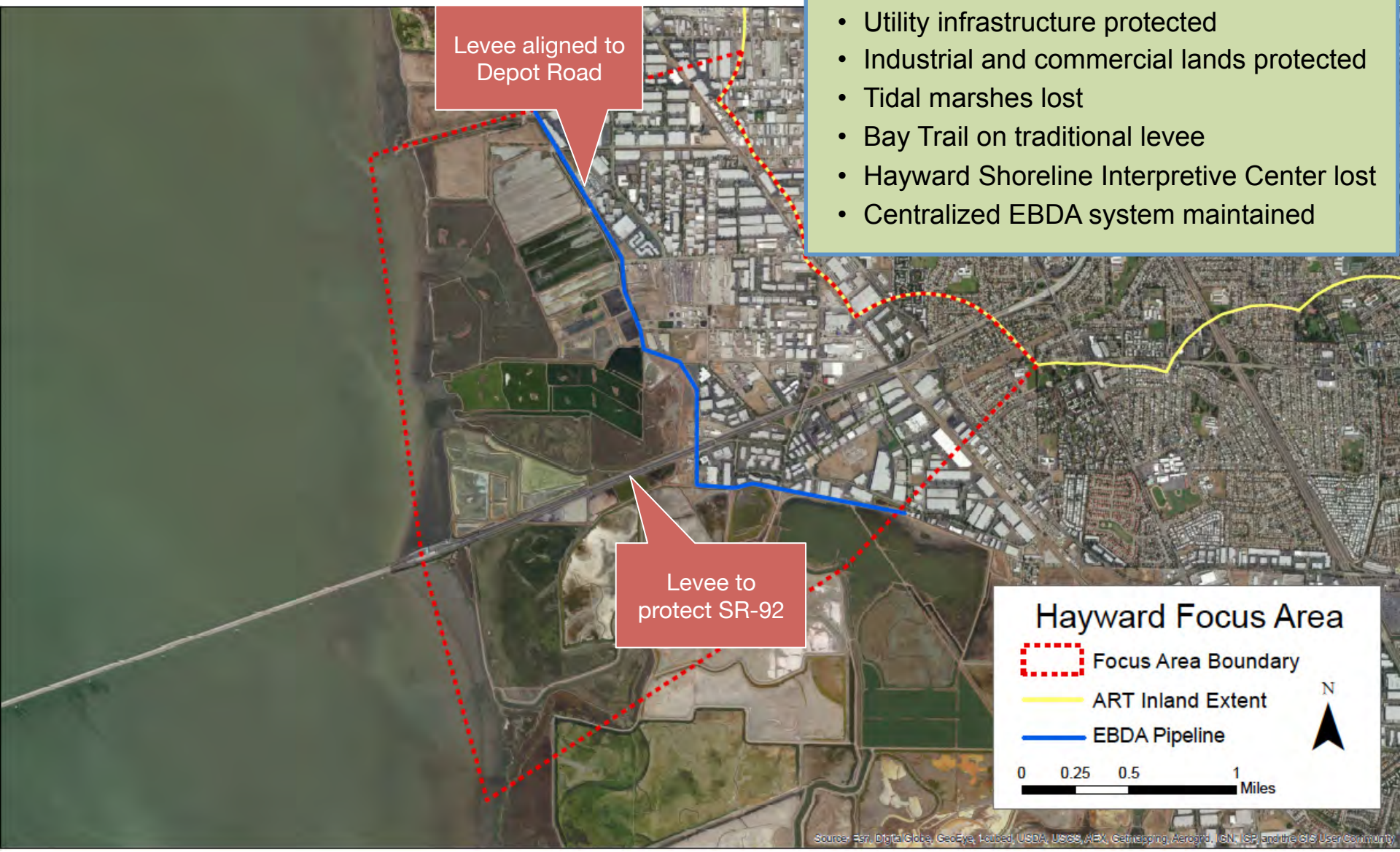
- Costly flood damage and recovery in industrial areas and on bridge approach
- Increased flood insurance premiums
- Tidal marshes lost
- Bay Trail lost
- Hayward Shoreline Interpretive Center lost
- Centralized EBDA system maintained



Traditional levee

Key outcomes

- Utility infrastructure protected
- Industrial and commercial lands protected
- Tidal marshes lost
- Bay Trail on traditional levee
- Hayward Shoreline Interpretive Center lost
- Centralized EBDA system maintained

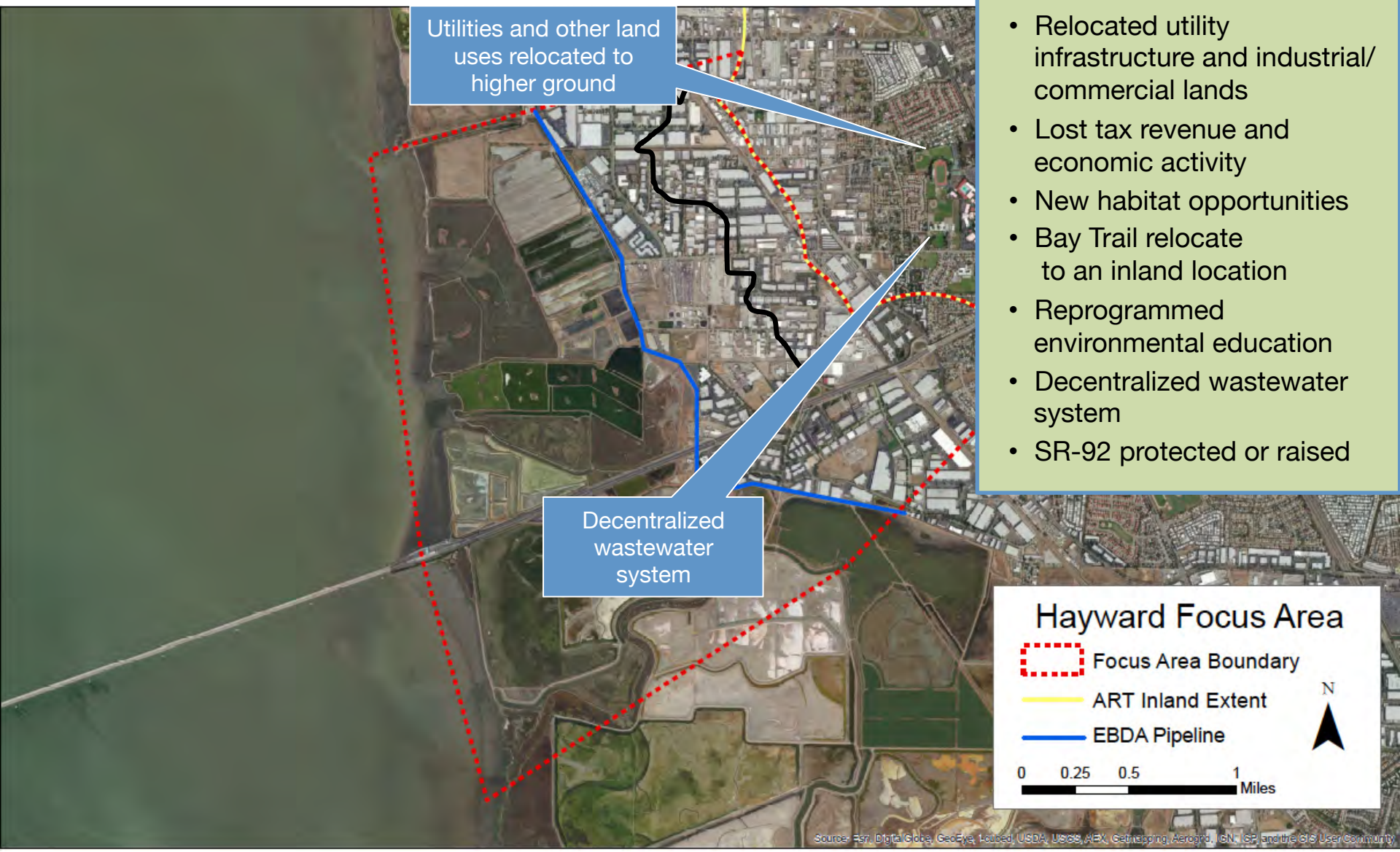


Horizontal levee

Key outcomes

- Utility infrastructure protected
- Industrial and commercial lands protected
- Tidal marshes migrate landward and connect with Eden Landing restoration
- Bay Trail on levee with adjacent habitat
- Relocated Hayward Interpretive Center
- Decentralized wastewater system

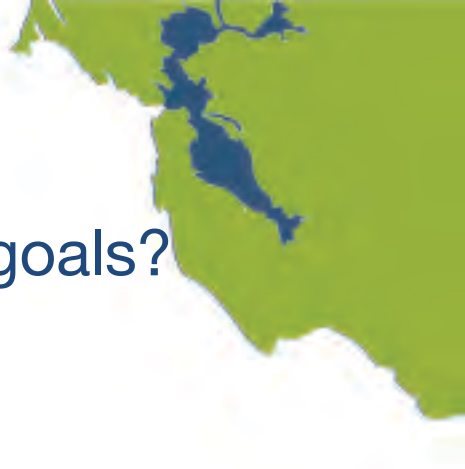
Room for the Bay



Key outcomes

- Relocated utility infrastructure and industrial/ commercial lands
- Lost tax revenue and economic activity
- New habitat opportunities
- Bay Trail relocate to an inland location
- Reprogrammed environmental education
- Decentralized wastewater system
- SR-92 protected or raised

Evaluating Visions for Hayward



1. How well do the visions meet our resilience goals?
   - Protect environmental value
   - Protect health, safety and welfare
   - Protect critical infrastructure
   - Build community and organizational capacity

2. What are the tradeoffs within and between the visions?

3. How can we compare the feasibility of the visions?

4. Steps for further assessment
   - Engineering possibilities for landscape solutions
   - Future solutions for Hayward Shoreline Interpretive Center

Key Outcomes

1. Adaptation planning involves working beyond existing intra-agency processes and across jurisdictional boundaries. ART staff play a critical role in convening local stakeholders and providing a structure for collaboration to improve shoreline resilience.

2. Current regulatory process for natural areas, shoreline improvements, and water quality makes current maintenance and repairs difficult; adapting to sea level rise impacts will require a more holistic approach to weigh short term and long term costs and benefits as well as multi-objective projects.

3. ART-led adaptation planning projects such as the Hayward Resilience Study are leading to local implementation

- Hayward 2014 General Plan prioritizes resilience and dedicates staff time to adaptation efforts
- EBDA Climate Ready Grant to study joint wastewater/wildlife/water quality solutions for the shoreline
- HARD community education on sea level rise impacts and adaptation

Hayward Resilience Study

For more information:

www.adaptingtorisingtides.org

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